This comment is offered by a technical expert in science, law, and policy.

Blocking throttling paid prioritization repealed allows for "fast lanes" which will eclipse those users requiring greater bandwidth for their supplemental services. The previous Open Internet Order ensured that services do not undermine the effectiveness of the Open Internet rules and all broadband providers' transparency disclosures cover any offering of such non-Internet access data services—ensuring that the public and the Commission can keep a close eye on any tactics that could undermine the Open Internet rules. With this in repeal, those issues will arise, among others; data caps can be set at will or at random, corporations will direct all traffic, and users will find their search results buried under false positives.

There are a lot of programs designed to promote net neutrality and freedom from censorship in oppressed countries, methods which were developed to disguise a user's actual traffic to censored countries and governments. Simply using a program or accessing a blocked site directly is blocked by the censor in communist countries such as China and Russia immediately; but the repeal of net neutrality would put the power of censorship to the entire U.S. in the hands of the highest bidder, encouraging the general user to resort to building or using an existing software program from a larger dark web outside of the U.S. for U.S. users compromising the U.S.'s current status as an internet leader. Further these programs aimed at re-routing users in order to gain direct access to sites (as was possible with the net neutrality) through permitted destination IPs disguise the true destination and increase national security concerns.[1]

The FCC needs to consider the ramifications not just of the repeal of the laws but of the 1) increase in use of the dark web by more users, 2) removal of responsibility of ISPs to provide accurate information in terrorism and other criminal online activities, 3) a downgrade for the U.S. as a location for free commerce, 4) an implication for vast numbers of legal issues arising from

[1] Full description and terminology can be found in Appendix A; however each of the following analytical sections contain an introductory outline of relevant actions for applicable legal statutes.

Constitutional commerce clause claims for nearly every retailer, and 5) the ultimate takeover of the internet in the U.S. by unregulated re-routing software that will now be permitted to not only build a profile for every U.S. user, but also direct what they are permitted to see and purchase on the internet.

I . Open Internet Rules History

The 2015 Open Internet Order expanded upon, and reinstated some of the rules from the 2010 Order after the *Verizon* decision by the D.C. Circuit Court.[2] This order created five distinct rules that regulate the internet service providers to protect customers and edge providers from techniques that block or limit legitimate and legal usage of the internet. These rules are no blocking, no throttling, no paid prioritization, no unreasonable interference or unreasonable disadvantage to consumers or edge providers (general conduct rule), and enhanced transparency.[3] Each of these rules have different implications when it comes to the mobilization and deployment of new software but there is also a great deal of uncertainty concerning the Open Internet Rules.

The FCC created these rules initially in 2010 in recognition that communication networks are best able to serve the public interest when consumers are able to make informed decisions about how networks are accessed and utilized.[4] These principles were first established in the *Carterfone* decision in 1968.[5] The principles of fostering competition, innovation, and free expression that were established in *Carterfone* guided the FCC to establish rules that moved into the digital age with the

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[2] *See, Verizon v. FCC,* 740 F.3d 623 (D.C. Cir. 2014).

[3] *Promoting and Protecting the Open Internet*, GN Docket No. 14-28, Report and Order on Remand, 25 FCC Rcd 17905. (2015 Open internet Order).

[4] *Id* at para. 60

[5] Carterfone, 13 FCC 2d 420.

rapid development of the internet.[6] The 2010 Open internet order established three basic rules to achieve these goals that were 1) no blocking; 2) no unreasonable discrimination; and 3) Transparency.[7] These rules developed a great deal of flexibility in regulating the internet and allowing internet service providers to develop different techniques for managing networks that didn't discriminate against certain content and customers.

In 2012, Verizon challenged the *2010 Open Internet Order*, claiming that the FCC had exceeded its regulatory authority under section 706 of the Telecommunications Act. The D.C. Circuit court found that the FCC did not exceed its regulatory authority and 706 grants broad authority to the FCC to regulate ISPs from using techniques that could be considered discriminatory.[8] Despite this favorable ruling the court invalidated the no-blocking rule and the anti-discrimination rule because this sort of regulation created a per se regulatory framework that treated mobile broadband providers as common carriers.[9] In response the *Verizon* decision, the FCC issued a Notice of Proposed Rule Making to address the vacuum of clear conduct-based rules following the D.C. Circuits decision.[10] The FCC received an overwhelming amount of response in favor or protecting the open internet which centered around the need for protection from blocking content,

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[6] *Preserving the Open Internet*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd

17905, 17937, 17941, paras. 56-63 (2010) (*2010 Open Internet Order*), *aff'd in relevant part Verizon v. FCC*, 740

F.3d 623 (D.C. Cir. 2014).

[7] Id, 25 FCC Rcd at 17906, para. 1.

[8] Verizon, 740 F.3d 623 at 635.

[9] *Id,* at 656-59.

[10] *See generally, 2014 Open Internet NPRM*, 29 FCC Rcd 5561.

throttling speed, deterring paid prioritization of content, and transparency of network practices by service providers. These comment created the foundation for the *2015 Open Internet Order*.[11]

These rules created responsibilities for the ISPs that promote a free, secure, and open internet.

II. No Blocking, No Throttling, No Paid Prioritization

First, the No blocking rule prevents broadband providers from blocking lawful content, applications, services, or non-harmful devices.[12] This means that the broadband service providers cannot block or stop lawful content delivery from getting between the client and content developers, or prevent customers and edge providers from using applications and services that do not disrupt the lawful flow of internet traffic. This rule was dates back to the *Carterfone*, decision to allow end users to access the information they wish, without the threat of a service provider from blocking this traffic to favor their own content.[13] The rule include all traffic that is transmitted from the content developer to the end user and implicates the Constitutional provisions and protections against state.[14]

The no throttling rule does not allow broadband providers to "impair or degrade lawful internet traffic on the basis of internet content, application, or service, or use of a non-harmful device, subject to reasonable network management." This rule was developed with the understanding that service providers can employ tactics that are not "out-right blocking" but could still have a discriminatory impact on the end user. For example, the service provider slow the speed of traffic that renders certain content unusable.[15]

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[11] *2015 Open Internet Order*, at para. 74-78

[12] *Id*, at para. 26.

[13] *Id*, at Para. 111-113

[14] *Id.*

[15] 2015 OIO, at Para. 120

When the speed of the traffic is slowed, degraded, or impaired based on the content being provided to the general end user the design is to get the client to content other than they desire. The speed and latency increase would have an impact on users without agreement to the speed changes to carry out service they request by repealing the Open Internet.

Finally, the no paid prioritization rule also is of concern. The FCC created this rule to ensure that ISPs could not receive consideration from 3rd parties to manage their network in a manner that benefits particular content, applications, services, or devices over others.[16] This rule was created for the purpose of ensuring fair completion on the network and ensuring that ISPs could not discriminate against certain content. The concern is that this would bifurcate the internet into a "fast-lane" and "slow-lane" that would disadvantage certain content developers over others[17].

It is conceivable that ISPs could use this repeal to reorder packets and deliver content to end users based on consideration. This is something that would violate the rule and would harm fair and open usage of the internet and is outside the scope of the "reasonable network management" exception. Transparency rules and the general conduct rule leave a great deal of uncertainty of what needs to be disclosed to the end user, who needs to disclose this information, what conduct the FCC is concerned about that might give rise to an administrative action.

III. The Transparency Rule

The transparency rule is the only rule that remains in effect from the 2010 Open Internet Order after the *Verizon* decision.[18] The transparency rule explicitly establishes things need to be disclosed to the customers from the ISPs to sufficiently allow customers to make informed decisions

[16] 2015 OIO at 120-122.

[17] OIO at 126.

[18] OIO at 156-160.

regarding the use of the services they provide.[19] These things are performance specifications, commercial terms of service, and network management practices.[20] The FCC offered clarification and additional guidance in 2014 on the transparency rules specifying network performance metrics, when information needs to be disclosed, and how the "safe harbor" disclosure format applies.[21]

Performance specifications that must be included by the transparency rules include actual speed, latency, packet loss rates, generalized descriptions of the service, technology, and expected delay periods.[22] Though these things have specifically required by the FCC under the transparency rule they have made it abundantly clear that anything that a "reasonable" customer would fine "material" in making informed decisions about the selection of service. [23] This leaves a great deal of uncertainty of what exact specification need to be disclosed to the end user. However, the order and subsequent comments by the FCC and the Consumer Advisory Committee has created safe harbors that providers could rely on in making their disclosures. [24]

The performance specifications requirement under the transparency rule protected against speed delays and latency problems inherent to software aimed at re-directing users. These delays would occur at the direction of the ISP or any hijacking software. It will be impossible for ISPs to determine how this might have an impact on the speed, latency, and packet loss for the users.

Also, network management practices utilized by the ISP need to be included in the transparency rule according to the Open Internet Order.[25] The specific requirements that are

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[19] Id.

[20] Id at 161.

[21] Cite public notice of Guidance at p. 7

[22] 2015 OIO at 165

[23] Id at 163-167

[24] Id at 168-170 and CAC disclosure

[25] Id at 169

included in the order include disclosures "related to congestion management, application-specific behavior, device attachment rules, and network security".[26] The order goes further to clarify that user-based or application-based practices should include the reason for the practice, the users that are effected, the triggers, and types of traffic that are subjected to the practice[27]. Re-routing users would no longer need to be disclosed to the end-users and in the standalone disclosures. and affects all users.

The last element of the transparency rule requires providers to disclose commercial terms of service at the point of sale.[28] The FCC requires that the price of the service, other fees, data caps, and allowances, privacy terms and conditions, and redress options.[29] Privacy concerns were directly addressed in a subsequent notice of guidance provided by the FCC which included detailed descriptions of the information that needs to be provided to the end-user.[30] Inspect all packets that travel through the ISP implicates some privacy concerns for the non-users and users of the program including how much information is inspected, the length of storage, and how this information is used.[31]

Repeal of the open internet rules encourages deep packet inspection and cryptographic inspection of the traffic coming across the network interconnection points to pick up information on U.S. users and can eliminate the history of that traffic creating additional national security concerns. This inspection raises concern this information will no longer need to be disclosed to all users of the ISP whose packet may travel through a location with re-routing capabilities. Further,

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[26] Id.

[27] Id.

[28] Id at 156

[29] Id at 164.

[30] FCC GUIDANCE NOTICE.

[31] 2010 OIO at Para. 56.

these changes would no longer need to be disclosed to end users so the users will have a defense for any location their traffic is found, and there will be no reliable record from the ISP on which to rely.

IV. The General Conduct Rule

The most vague rule of the Open Internet Rules is the "no unreasonable interference or unreasonable disadvantage to consumers or edge providers" rule. This aptly named rule has simply become known as The General Conduct Rule. This rule was designed with the belief that the internet is a place of innovation and disruption.[32] Despite creating the three bright-line rules to prevent harms against the internet, the FCC was concerned that there could be current of future discriminatory harms that would develop on the internet that needed to be addressed on a case-by-case basis.[33] For this reason, the Commission adopted the rule to allow the prohibition of practices that unreasonably interfere or disadvantage consumers or edge providers.[34]

The FCC created a series of factors that they will consider when deciding if a particular practice would need to be reviewed as an unreasonable interference or disadvantage for consumers or edge providers.[35] These factors include the competitive effects of the practice, consumer protection, effects on innovation, investment, broadband deployment, free expression, standard practices, and application agnostic.[36] These factors are methods for the FCC to identify potentially discriminatory practices that ISPs implement and could trigger review.

Up until this point there has been no actions taken by the enforcement bureau under the guise of the General Conduct Rule. A former non-concern for providers looking to implement new technologies, this rule was created to prevent practices that would have a substantial impact on the

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[32] 2015 OIO at 133.

[33] Id.

[34] Id at 136.

[35] Id.

[36] Id at 140-146.

networks and prevent users and edge providers from accessing and delivering content. If repealed, software could be used for discrimination and creates new and complex threats to net neutrality that did not already exist.

Ajit Pai is aggressively moving to roll back regulations at the FCC starting with the net neutrality rules. Since his appointment and confirmation Mr. Pai has made sweeping declarations of reducing regulatory frameworks to promote competition and innovation in the market place; however if these rules are rolled back there is threat of deployments of rogue software over at least the next four years. The FCC needs to consider the ramifications not just of the repeal of the laws but of the 1) increase in use of the dark web by more users, 2) removal of responsibility of ISPs to provide accurate information in terrorism and other criminal online activities, 3) a downgrade for the U.S. as a location for free commerce, 4) an implication for vast numbers of legal issues arising from Constitutional commerce clause claims for nearly every retailer, and 5) the ultimate takeover of the internet in the U.S. by unregulated re-routing software that will now be permitted to not only build a profile for every U.S. user, but also direct what they are permitted to see and purchase on the internet. One must not repeal the open internet rules without full analysis of the ramifications coming from not only U.S.-based corporations, but foreign attackers, hackers, criminals, and the effect on commerce, dark-web expansion, stocks, and the internet market abroad.

Respectfully submitted.

Appendix A

Bundle information in IP suite:

IP- provides unified addressing (IP addresses) to communicate between computers. (IPv4 is the fourth version and currently, the most common.)

TCP- provides a reliable link between two computers (if packet get lost - it is re-transmitted).

HTTP -protocol used mostly for browsing the internet for text (Safari, Firefox, etc). Hypertext converts text files hosted by a server to searchable URLs and connects the IP addresses through the IP suite. Inherently contains a valid TCP.